

Date: Tue, 24 May 94 04:30:32 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #139
To: Ham-Homebrew

Ham-Homebrew Digest Tue, 24 May 94 Volume 94 : Issue 139

Today's Topics:

 dir /new (2 msgs)
Drake MN2000 to 160 meters-- Anyone done it?
Man named Loomis invented radio?
Modification of walkie talkies.. (2 msgs)
Need help on inductor winding
Propagation E-Sporadic
Proper way to bias a tunnel diode? (2 msgs)
Q: Plans for TNC?
Transmitting Tube Cooling
TV Xtal? filters

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 23 May 1994 08:11:13 GMT
From: ihnp4.ucsd.edu!swrinda!emory!kd4nc!ke4zv!gary@network.ucsd.edu
Subject: dir /new
To: ham-homebrew@ucsd.edu

In article <1994May22.155501.1@ccsvax.sfasu.edu> f_speerjr@ccsvax.sfasu.edu (James Speer) writes:

>I'm re-entering home-brewing after a long absence. My skills include all the
>oldfashioned stuff you don't much need anymore. Like laying out aluminum
>panels, wiring kilovolt circuits so they don't kill you, even winding tank
>coils on octal-plug forms. Even so, I can actually etch a circuit board and get
>the circuit to work. But one item has me stumped: How does the average
>kitchen-sink tinkerer get the two sides of these complex, double-sided digital

>boards to register. Close is clearly not enough with these boards...looks like
>you need to be in register to +- .01 inches. One thing has occurred to me. I
>could try using the Xerox-transfer, iron-on patterns, etch one side, then drill
>it and register with holes cut into the pattern for the other side. Guess that
>would work, but it seems like a LOT of work.

>

>So what simple operation am I missing? And if this is already in a FAQ
>somewhere, please accept my appology in advance, and point me to it.

What you do is have registration bullseyes on at least the four corners
of both patterns, drill holes through the board based on one pattern's
bullseyes (often the holes that will end up as the board mounting holes),
and register the other pattern on those holes. Now expose both sides, and
etch. Yes it is a pain to do double sided boards. For real pain, try doing
multi-layer boards.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Mon, 23 May 1994 13:09:07 GMT
From: psinntp!arrl.org!zlau@uunet.uu.net
Subject: dir /new
To: ham-homebrew@ucsd.edu

James Speer, K5YUT, Austin State University(f_speerjr@ccsvax.sfasu.edu) wrote:
: I'm re-entering home-brewing after a long absence. My skills include all the
: oldfashioned stuff you don't much need anymore. Like laying out aluminum
: panels, wiring kilovolt circuits so they don't kill you, even winding tank
: coils on octal-plug forms. Even so, I can actually etch a circuit board and get
: the circuit to work. But one item has me stumped: How does the average
: kitchen-sink tinkerer get the two sides of these complex, double-sided digital
: boards to register. Close is clearly not enough with these boards...looks like
: you need to be in register to +- .01 inches. One thing has occurred to me. I
: could try using the Xerox-transfer, iron-on patterns, etch one side, then drill
: it and register with holes cut into the pattern for the other side. Guess that
: would work, but it seems like a LOT of work.

Maybe you don't. There are some things that are beyond kitchen-sink
tinkerers--building GaAs MMICs, for instance. It is entirely possible
that the traces on a board will be too thin and require too much precision
to easily fabricate at home. Interestingly enough, the digital people have
pushed board houses to the point where getting "precision" etching for

microwave microstrip work isn't really a problem anymore.

However, you might consider wire-wrapping such a board. Many people have had good results with this, even with clock speeds in excess of 20 MHz. Or, go ahead and buy the board...

--

Zack Lau KH6CP/1 2 way QRP WAS
 8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

Date: Tue, 24 May 1994 00:15:08 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!math.ohio-state.edu!
magnus.acs.ohio-state.edu!csn!col.hp.com!srngenprp!alanb@network.ucsd.edu
Subject: Drake MN2000 to 160 meters-- Anyone done it?
To: ham-homebrew@ucsd.edu

YVES ALBERT (yves1@delphi.com) wrote:
: Anyone have a ny experience adding 160 capability to a Drake MN2000 antenna
: tuner? (aside from external components) any help would be appreciated.

Sounds like it would be more trouble than it's worth. You would have to unsolder the bandswitch and replace it with one with an extra switch position. Then you'd have to add a 160 meter tank coil. The only thing that would likely fit would be a high-power powdered-iron toroid. The tuning capacitors would likely not have enough range -- you would have to add switchable fixed capacitance in parallel with both of them.

It would probably be easier to build a separate 160 meter tuner and use the MN2000 to switch it in as appropriate!

AL N1AL

Date: 23 May 94 20:24:23 GMT
From: ihnp4.ucsd.edu!usc!nic-nac.CSU.net!charnel.ecst.csuchico.edu!psgrain!
news.tek.com!gvgpsa.gvg.tek.com!gold.gvg.tek.com!gold@cleveland@network.ucsd.edu
Subject: Man named Loomis invented radio?
To: ham-homebrew@ucsd.edu

In Article <2r8f28\$ha2@vixen.cso.uiuc.edu>, btbg1194@uxa.cso.uiuc.edu
(Bradley T Banko) wrote:
>Newsgroups: uiuc.org.synton

>Subject: Somebody named Loomis invented radio?
>Date: 1 May 1994 02:01:51 GMT
>Organization: University of Illinois at Urbana
>
>I read something recently that a man named Loomis might have
>"invented" radio in the late 1800's before Marconi & Hertz et al.
>

Mahon Loomis - yup!

Didn't exactly invent radio, but he did experiment with atmospheric communications. Seems he flew two kites with wire for leads. In one lead was a telegraph key and in the other a primitive galvanometer. Keying one circuit gave a reading in the other, which was located several miles away.

That's serious qrp work.

```
*****
* Grover Cleveland                               WT6P@KE6LW.#NOCAL.CA *
* Instructional Designer                         v(916) 478-3153 *
* The Grass Valley Group Inc. - A Tektronix Company f(916) 478-3831 *
* Grass Valley, California                      DoD 7388 *
* "Snoozing in the grass next to the information goat path." *
*****
```

Date: 23 May 1994 23:35:59 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!news.ans.net!
hermes.louisville.edu!starbase!sebelt01@network.ucsd.edu
Subject: Modification of walkie talkies..
To: ham-homebrew@ucsd.edu

I want to modify a pair of (cheap) walkie talkies to have greater range. I have three things in mind:

1 - Improve the antenna: $49.860 / 468 = 9.4$ ft. Will a 9.4 ft length of wire do the trick? What gauge is best?

2 - Get rid of some resistors. It seems that there is a resistor right between a very small coil and the antenna. I'm not sure of it's purpose (does it just reduce the output power, or limit interference, or protect something in the transceiver? The resistor is labeled L2, with the coil before it labeled L1. (Which makes me think it has something to do with tuning or interference).. If I remove this will my signal become stronger? (where I'm using these interference will be virtually no problem).

3 - Add an amplifier. How hard is it to amplify the signal? Is it just a matter of adding on a resistor, or is such a circuit more complex. Again, I'm not too worried about causing interference where these transceivers will be used, but I need to make them as powerful as possible.

Thanks for any help/suggestions/whatever. Please respond by mail if at all possible, I will post a summary in the form of a how-to, if I can get this to work.

Date: 24 May 1994 04:40:13 GMT
From: ihnp4.ucsd.edu!agate!usenet.ins.cwru.edu!po.cwru.edu!sct@network.ucsd.edu
Subject: Modification of walkie talkies..
To: ham-homebrew@ucsd.edu

In article <2rrekv\$90c@hermes.louisville.edu>,
<sebelt01@starbase.spd.louisville.edu> wrote:
> I want to modify a pair of (cheap) walkie talkies to have greater range. I
> have three things in mind:

That's a bad idea. Read on to see why.

> 1 - Improve the antenna: $49.860 / 468 = 9.4$ ft. Will a 9.4 ft length of wire
> do the trick? What gauge is _best_?

It could conceivably help, but you need to use the right formula for the antenna design and connect it correctly to the radio. The radio may be designed for the antenna it is using and may function incorrectly with other antennas.

> 2 - Get rid of some resistors.

Not all that looks like a resistor is one. With a name like L2, that "resistor" is an inductor. It is there to reduce interference, to match the transmitting circuitry to the antenna, or both. Don't remove it.

> If I remove this will my signal become stronger? (where I'm using these
> interference will be virtually no problem).

Removing L2 will not improve your signal in any perceptible way. If it is there for antenna matching, removing it will make your signal worse!

The interference you can cause will be a problem. Plopping a spurious signal into the FM broadcast band, the business band, or a TV channel is uncouth. Putting it into the aircraft band could cause safety problems. Worse, you can't know whether you are causing interference without test equipment like a spectrum analyzer.

> 3 - Add an amplifier. How hard is it to amplify the signal? Is it just a
> matter of adding on a resistor, or is such a circuit more complex.

An amplifier requires more than a resistor.

If you want better range, I suggest a CB in handheld or mobile form.
That will give you 4 watts output in near-line-of-sight communications.
For better than that, get a ham radio license. The no-code license is
not too hard to get and opens a wide range of communications.

What are you trying to do with the radios, anyway?

Stephen

--

Stephen Trier
sct@po.cwru.edu
KG8IF

Date: 23 May 94 10:26:21 EST
From: ccsua.ctstateu.edu!white@yale.arp
Subject: Need help on inductor winding
To: ham-homebrew@ucsd.edu

I'm building the RadioKit QRP-20 kit. The manual calls for inductors
with "2-T links"..... what does that mean? Does it mean a 2-turn
secondary? Thanks, and if anyone has info on winding inductors (esp.
the oddball subminiature inductor for the 7MHz Optimized Transceiver),
I would appreciate a lead on where to find it.
73 de N1QVE
Harry

Date: 23 May 1994 14:59:15 -0700
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!news.intercon.com!udel!
news.sprintlink.net!news.world.net!seatimes.seatimes.com!seatimes.seatimes.com!
not-for-mail@network.ucsd.edu
Subject: Propagation E-Sporadic
To: ham-homebrew@ucsd.edu

Daniel Rossier (drossier@disuns2.epfl.ch) wrote:
: Could anybody tell me if it's possible to receive on the 2m band
: using the E-sporadic propagation. It seems to be better with
: the SSB mode but I'm not sure that it's not possible to do it with

: a FM 2m Handy with 5watts (and perhaps also on 70cm band) ??

During the Fall we typically get interference from another repeater about 150 miles south of us. In fact, the local control op has been known to drop the PL tone so the local machine won't respond and carry on a conversation (short) with the control op of the other machine (friendly conversation!).

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+-----+
| Steve Butler          Voice: 206-464-2998      |
| The Seattle Times     Fax: 206-464-2905        |
| PO Box 70             Internet: sbut-is@seattimes.com |
| Seattle, WA 98111     Packet: KG7JE @N7FSP.WA.NA  |
+-----+
```

Date: Mon, 23 May 1994 19:57:21 GMT
From: ihnp4.ucsd.edu!usc!nic-nac.CSU.net!koko!altair.csustan.edu!
jacob@network.ucsd.edu
Subject: Proper way to bias a tunnel diode?
To: ham-homebrew@ucsd.edu

know tunnel diodes are an extinct species, hence the trouble
I am having locating circuits for them, but does anyone out there
know how to bias these little demons so that they remain stable?
I need to bias them at 0.15 volt, so that after applying a
0.05 volt modulating voltage they remain near their peak tunnel
current, without strange things happening.

Any help appreciated.
Dave.

Date: Mon, 23 May 1994 23:14:23 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!europa.eng.gtefsd.com!
darwin.sura.net!fconvx.ncifcrf.gov!mack@network.ucsd.edu
Subject: Proper way to bias a tunnel diode?
To: ham-homebrew@ucsd.edu

In article <Cq9u3M.9sp@koko.csustan.edu> jacob@altair.csustan.edu (Dave Jacob)
writes:

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> know tunnel diodes are an extinct species, hence the trouble
> I am having locating circuits for them, but does anyone out there
> know how to bias these little demons so that they remain stable?
> I need to bias them at 0.15 volt, so that after applying a
> 0.05 volt modulating voltage they remain near their peak tunnel
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>current, without strange things happening.

This is not my line, and so comes under the category of ANY advice...

2

You need to current bias as there are 3 places on the v-i curve for the tunnel voltage. So find the tunnel current first (from specs), and you don't get any choice about the voltage.

Joe Mack NA3T
mack@ncifcrf.gov

>

>Any help appreciated.

>Dave.

>

>

Date: 23 May 94 11:07:59 -0600

From: ihnp4.ucsd.edu!sdd.hp.com!saimiri.primate.wisc.edu!news.doit.wisc.edu!
uwec.edu!hemp!whitemp@network.ucsd.edu

Subject: Q: Plans for TNC?

To: ham-homebrew@ucsd.edu

Hello-

Are there any published plans for a 1200 baud TNC? Not a baycom type, but a 'full blown' TNC. If so, where?

--

Mike White whitemp@cnsvox.uwec.edu
N9UXC Tech+ and climbing

Date: Mon, 23 May 1994 14:32:29 GMT

From: ihnp4.ucsd.edu!swrinde!gatech!darwin.sura.net!mlb.semi.harris.com!
controls.ccd.harris.com!drs@network.ucsd.edu

Subject: Transmitting Tube Cooling

To: ham-homebrew@ucsd.edu

I hesitate to post to this group anymore - I seem to get responses indicating that I should know all the answers since I have an extra class license. Anyway:

Anybody ever made any sort of measuring device for measuring the back pressure in a cooling system for a transmitting tube? I have seen references to things like so many cubic feet of air flow. Or .6 inches of backpressure. Or does

everyone just make sure they are running a blower that is over-rated just to be safe? I'd prefer to do it right, since the bigger the blower, the more noise present in the shack. Unless I put the blower in a different room! If this is the sort of thing that interests others, you might post your comments here rather than direct to me. Thanks....

73's Doug

--

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-----  
|           Doug Snowden           |  
|           N4IJ                   |  
| email: drs@ccd.harris.com       |  
-----
```

Date: 24 May 1994 08:51:25 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!EU.net!sun4n1!fwi.uva.n1!
agterkam@network.ucsd.edu
Subject: TV Xtal? filters
To: ham-homebrew@ucsd.edu

Can someone tell me more about 38.9 MHz TV-IF XTAL filters.

I presume these are XTAL filters ?

OFW 361 (Siemens)
SW 170 (PLessey)

What are there specs ? Fo, BW, etc.

Chears, Dirk.

End of Ham-Homebrew Digest V94 #139
